Sidney, B. C., Mrs. R. A. Kingman, Wallingford, Vermont, and Mrs. Wm. M. Everall, Victoria, B. C. His eldest son and lifelong assistant Mr. James M. Macoun died at Ottawa in January, 1920.

Victoria Memorial Museum, Dept. of Mines, Ottawa, Canada.

GENERAL NOTES

NOTES ON THE HABITS OF BLARINA BREVICAUDA

While I was in camp at Lake Missanag, Ontario, in August and September, 1919, two short-tailed shrews (*Blarina brevicauda*) came about the tent frequently, and I was able to learn something of the habits of these usually rather elusive little mammals.

They were active both by day and night. By day they avoided brightly lighted spots, traveling to the tent under the cover of dead leaves, herbs, and logs; and passing over open places like a flash. In the tent they kept mostly close to the side-walls, or to the pile of wood beside the stove. They were ceaselessly active, never resting for a moment unless engaged in eating something. They kept up a continual, rather musical, chirping squeak, which resembled very strongly the twitter of American goldfinches. This "song" of theirs was loud enough that we could hear them coming some time before they entered the tent.

The Blarinas fed on insects, both living and dead. They caught and consumed all the crickets (*Gryllus assimilis* and *Nemobius fasciatus*) which previously had been common under the sod-cloth along the base of the walls of the tent, and also devoured any dead insects which I had rejected after killing in the cyanide bottle. On one occasion I saw one of them jump repeatedly at a sphinx larva which was suspended on a dead poplar twig a few inches above the ground, and at last succeed in pulling it down and into a tunnel in the dried grass. They ate with avidity anything of an animal nature, including pieces of salty chipped beef, and their particular delight was to get into the frying-pan and feed on the cold fat which it contained. So engrossed did they become in their gormandizing of this fat that they paid no heed to my presence and several times I took up the pan and walked about with it while they were thus engaged. They were not at all expert climbers and it was quite a feat for them to clamber over the high edge of the frying-pan. Once on top of the edge they tumbled in head-first.

In hunting for food they seemed to depend entirely on their sense of smell, and when thus prospecting they wriggled their long pink snouts continuously and inserted them into every nook and crevice. They appeared to use their eyes merely in avoiding well-lighted situations.—A. Brooker Klugh, *Queen's University, Kingston, Canada.*

RED BAT AT SEA

On the first day of September, 1920, when still 3 days out from Philadelphia on our voyage from Cape Town, South Africa, I found a red bat (*Nycteris borealis borealis*) clinging to the ledge under the manger of the giraffe box. The record may be of interest to American mammalogists.—A. K. Haagner, *Pretoria, South Africa.*

THE BLACK BEAR AS A DESTROYER OF GAME

On June 12, 1920, while approaching a camping site on the Lamar River, Yellowstone National Park, in company with M. P. Skinner, park naturalist, I noted a black bear (*Ursus americanus*) hunting around through the sage brush on a nearby hillside. Five minutes later we stopped for the night, and as I descended from the machine, I turned my ten power glasses on the bear, and was surprised to see that he was making off, at a leisurely gait, with an elk calf in his mouth. He paid not the slightest attention to the presumable mother of the calf, which followed him anxiously within fifteen or twenty feet; she, in turn, being followed by three other cows. Shortly, the bear entered a small grove of aspens into which the cows were afraid to follow, and they walked back and forth along the border of this for some time. Three of the cows soon dispersed, but the fourth wandered about disconsolately until dark.

When with the cows, the elk calves are reasonably safe, but the latter are usually hidden in the brush or forest while their mothers are feeding in the meadows, and it is at such times that the bears have a chance to make a meal, which opportunity, according to Skinner, they never fail to embrace. I have observed the "hidden" calves in the woods, and have noticed that as long as a person is in motion, although only six feet away, the calves remain absolutely still, with neck extended along the ground, but the instant the person stops, they are up and sprawling through the timber at their best gait. These notes may be of interest to those who contend that the black bear is harmless to game, and confines his attentions to more humble fare.—A. Brazier Howell, *Pasadena, Calif.*

THE TREE-CLIMBING WOLVERINE

Perhaps no apology is needed for this addition to my note on the tree climbing of the wolverine recently printed in the Journal, but I regret that it was delayed.

Mr. John B. Burnham of New York, who went to Alaska at the time of the Klondike excitement, tells me that wolverines climb trees, and that this habit is well known there. These animals are constant plunderers of tree caches—stores of food or other articles placed high up in trees to protect them from the ravages of ground dwelling animals—and such tree caches are always built, where this is possible, with an overhang to prevent the wolverine, when it climbs the tree, from reaching the platform on which the articles are placed. When available, sheet iron or tin is sometimes nailed around the trees below the cache to make climbing more difficult.

In the winter of 1897–98, a wolverine one night climbed a single spruce tree standing near the corner of Mr. Burnham's cabin, and pulled down a piece of meat that had been hung on a limb seven or eight feet above the ground. The wolverine's tracks were plain in the snow, and its claw marks on the bark of

the tree. This wolverine frequently visited the neighborhood of the cabin, and at engtli was trapped in a dead fall strong enough and heavy enough, it was thought, to have held a young bear. The animal was not killed—although the fall log and what had been put on it must have weighed 800 or 1000 pounds—but pulled itself out and went off, leaving blood and hair which told unmistakably what animal had been caught.

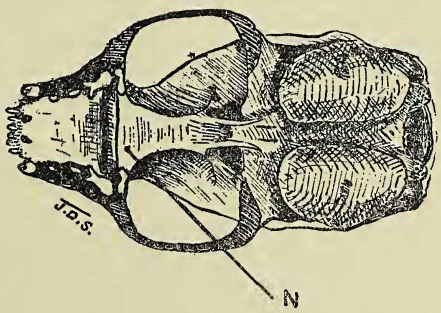
Mr. J. P. Holman of New York has often seen in Alaska caches protected by tin nailed about the tree trunks.

Mr. T. H. Bowler, M.E., of New York, a former member of the Northwest Mounted Police, states to me that there is no question but that wolverines climb trees to rob caches. He also speaks of the common practice of splitting tin coal oil cans and nailing them around the tree trunks below the caches to prevent the wolverines getting support for their claws. Notwithstanding this precaution, he knows of instances where wolverines have robbed caches in trees that were thus protected.

Apropos of the ancient story that the wolverine throws down bits of moss to attract the deer under the tree in which he is concealed, an observation by Mr. Burnham seems interesting. In his deer park he has seen deer attracted to oak trees in which gray squirrels were nutting, by the sound of the squirrels barking. The deer had learned that the gray squirrels dropped many acorns. He says, "Several years ago there was a very heavy crop of acorns on an oak ridge. I hunted this ridge three or four different days, and as I was searching particularly for large bucks I had abundant time to watch the deer. Several times I saw feeding deer raise their heads when they heard the squirrels barking at a distance and look intently in the direction of the sound. If they saw any nuts dropping, they walked over under the tree in which the squirrel was working and ate the acorns. They had learned to associate the sound with the food."—Geo. Bird Grinnell, *New York City.*

CURIOUS PALATAL OBSTRUCTION IN MUSTELA LONGICAUDA

While collecting on the prairies north of Islay, Alberta, Canada, I took among others on October 31, 1919, a specimen of *Mustela longicauda* disclosing a rather



curious circumstance. Upon cleaning the skull I found a tough length of vegetable stalk, in diameter about the size of a knitting needle, firmly wedged in the cups formed by the rearmost and second molariform teeth. The piece fit securely

and neatly and was removed only after a surprising degree of pressure. By the depression of the palatal cartilage I judged the obstruction to have been in position for a considerable time. The animal doubtless engulfed it along with food; and by a singular chance, the piece being of precisely the right length, it caught and lodged permanently in the position as shown in the sketch. The working of the tongue against the unnatural protuberance would serve daily to force it more securely into the cups. Beyond an early and temporary irritation the animal doubtless suffered but little material disadvantage. The stalk on dissection seemed peculiarly gritty and hard as if undergoing as it were a kind of saline petrifaction. Upon examining several skulls of *longicauda* taken at the same time and place the cups or pits of the one under discussion seemed just perceptibly enlarged by the obstruction. The individual was large of frame (total length, 450 mm.; t. vert., 155; foot, 50; ♂) and in perfect physical condition.—J. Dewey Soper, *Guelph, Ont.*

ERRONEOUS IDEAS CONCERNING SKUNKS

It is commonly believed that if a skunk be picked up by the tail he is powerless to discharge his scent; it is also believed by many people that if the fluid from the scent glands reaches the eye it will cause blindness. Evidence secured during this summer seems to demonstrate that neither of these beliefs is tenable.

August 10, 1920, a member (not the writer) of a Michigan Museum of Zoology expedition working near Little Girl's Point in Gogebic County, Michigan, caught a nearly grown male skunk (*Mephitis hudsonica*) in a trap. A wire noose on a stick was slipped over the skunk's head, and after it was drawn tight and the animal partly choked, the trap was removed. The skunk, however, was not quite dead and to prevent him from getting his feet up on the noose, where he could have discharged his scent, the wire was given a slight jerk from time to time. At one of these jerks the wire broke. To keep the skunk from escaping while a new noose was being made the animal was held up by the tail. At this time he was nearly dead from the choking he had received, but he soon began to recover and suddenly without any warning he discharged a small quantity of the scent fluid into the left eye of his captor. The injured eye smarted sharply and both eyes immediately produced many tears. The eye was wiped out with a handkerchief, for there was no stream of water within a mile, and in about five minutes the smarting passed away, leaving, aside from the odor, no after effects.

I know of another case where, while a trapper was skinning a skunk, the scent fluid was accidentally discharged into the eye. The eye was well bathed in water and no permanent damage to the vision resulted.

Skunks seemingly cannot discharge the scent if held up off the ground by one foot where this has been caught in a trap. But if they can get the hind feet upon the trap which is holding a front foot the scent can be discharged. An instance of this kind happened in Gogebic County on the expedition above mentioned. If often happens, however, that a skunk which is handled slowly and cautiously in a trap can be lifted off the ground by a pole and will not discharge the scent even though three or all of his feet are on the pole. It may be possible then that a skunk might sometimes be held off the ground by the tail without disastrous results, but there is no question but that he is fully able to discharge the scent under these conditions.—Lee R. Dice, *University of Michigan, Ann Arbor, Mich.*

DATES OF SHEDDING OF ANTLERS

The data on the shedding of antlers at the National Zoological Park in the November number of the Journal of Mammalogy were of intense interest to me and I append data on same in the Philadelphia Zoological Garden for the year 1920:

Axis deer (*Cervus axis*)	March 19.
Barasingha deer (*Rucervus duvaucelii*)	April 1, 6.
Virginia deer (*Odocoileus virginianus*)	January 3; April 14.
Black-tailed deer (*Odocoileus columbianus*)	February 3.
American elk (*Cervus canadensis*)	March 27, 28.
European red deer (*Cervus elaphus*)	March 10.
Japanese deer (*Sika nippon*)	April 12; May 2, 7.
Kashmir deer (*Cervus hanglu*)	April 30.
Hog deer (*Hyelaphus porcinus*)	February 1.

—C. Emerson Brown, *Zoological Gardens, Philadelphia.*

NOTES ON NOMENCLATURE OF SOUTH AMERICAN MAMMALS

Dasypus hybridus Desmarest.—This name should be cited from Desmarest 1804 (Nouv. Dict. d'Hist. Nat., vol. 24, Tab. Meth. Mamm., p. 28, 1804) instead of from Fischer 1814 (Zoognosia, vol. 3, p. 126, 1814).

Lama guanicoe Müller.—Molina's name *Camelus huanacus* (Saggio sulla Storia Nat. del Chili, pp. 317–320, 342, 1782) for the large southern guanaco is antedated by *Camelus guanicoe* Müller (Natursyst. Suppl., p. 50, 1776). The southern form, therefore, should be known as *Lama guanicoe* and the small Peruvian guanaco described by Lönnberg (Archiv f. Zool., vol. 8, no. 19, p. 8, 1913) becomes *Lama guanicoe cacsilensis.*

Tayassu pecari Link.—Fischer's specific name *pecari* (Zoognosia, vol. 3, pp. 285–287, 1814) now commonly cited for the white-lipped peccary is antedated by *Sus pecari* Link (Beytr. z. Naturgesch., vol. 2, p. 104, 1795). The earlier reference, therefore, should be used.

Dasyprocta paraguayensis Liais.—Although provisionally and somewhat irregularly proposed (Climats, Geol., Faune du Bresil, p. 536, 1872), this name is clearly based on Azara's *Acouti.* As shown by Thomas, Azara's animal is not the one named *azarae* by Lichtenstein but a smaller species which has been called *felicia.* This species, therefore, should take the name *paraguayensis* and *Dasyprocta felicia* Thomas (Ann. & Mag. Nat. Hist., (8), vol. 20, p. 310, 1917) becomes a synonym.

Sciurus boliviensis nom. nov.—This name is proposed as a substitute for *Macroxus leucogaster* Gray which is preoccupied by *Sciurus leucogaster* F. Cuvier 1831 (Suppl. Hist. Nat., Buffon, vol. 1, p. 300, 1831). Cuvier's name is a synonym of *Sciurus aureogaster,* which applies to a species of the subgenus *Echinosciurus,* while Gray's name stands for a species of the subgenus *Leptosciurus.* For those who regard these groups as full genera, therefore, the *leucogaster* of Gray would not be invalidated by a previous *leucogaster* belonging to a different genus. If the respective groups are regarded only as subgenera, however, action as above is required.

Sciurus gerrardi inconstans nom. nov.—This name is proposed as a substitute for *Sciurus versicolor* Thomas 1900 (Ann. & Mag. Nat. Hist., (7), vol. 6, p. 385, Oct. 1900) which is preoccupied by *Sciurus versicolor* Zimmermann 1777 (Spec. Zool. Geogr., p. 520, 1777).

Mystax ursulus Hoffmannsegg.—Although usually quoted from Humboldt or Geoffroy 1812, the name *ursula* for the black tamarin marmoset appears to have been used first by Hoffmannsegg in 1807. The citation is as follows: *Saguinus ursula* Hoffmannsegg, Mag. Gesellsch. Naturforsch. Freunde, Berlin, vol. 1, 2tes Quart., p. 101–104, Apr.–June 1807.

Cebus nigritus Goldfuss.—Buffon's *Sajou negre* (Hist. Nat. Suppl., vol. 7, p. 109, pl. 28, 1789) was given the technical name *Cercopithecus nigritus* by Goldfuss in 1809 (Vergleichende Naturbeschreibung d. Säugeth., vol. 1, p. 74, 1809). Hence the current name *Cebus cirrifera* Humboldt 1812 should be supplanted by *Cebus nigritus* Goldfuss 1809.—Wilfred H. Osgood, *Field Museum of Natural History, Chicago, Ill.*

NOTES ON THE MAMMALS OF THE LOWER YUKON REGION

The following notes refer in general to the region roughly bounded by the Yukon River from Holy Cross to Russian Mission, and by the Kuskokwim from McGrath to Bethel, 500 miles by river. They relate unless otherwise indicated to the year 1919. This region has periods when wild life is abundant. These are followed by periods of scarcity. This applies to our resident game birds as much as to mammals. For some years there has been a very notable scarcity of small mammals generally in this section. A marked increase is noticeable in the various species this winter (January, 1920) and we may look forward with confidence to a rapid increase during the next few years.

To be more particular, I will say the Canada lynx, common generally over this range in 1915 and 1916, disappeared almost entirely. The brush rabbit or varying hare is another striking example of a species which becomes excessively abundant and then disappears suddenly almost to the last one. In 1914, I often walked along the river bank near McGrath Postoffice with a gun and killed twenty or more of these hares, hanging them in bushes and leaving them for a native to pick up with a boat, as the load was often too much to carry. During the years 1915 to 1918, I do not remember to have seen one of these rabbits. The foxes also were very scarce and the few that remained seemed hungry and were not fat. Foxes in this locality get quite fat when food is plentiful, but the various species of mice also were gone, as were our resident game birds. But now we see a few lynxes returning, there are also more foxes, and rabbits are common, but not abundant, in a few localities, and there is an abundance of mice. If local conditions are a guide, then Alaska should receive more money for its furs this season than ever before in its history; and this notwithstanding the fact that two important furs, marten and beaver, are protected by law. The catch of mink this season has been large and the price very high.

Weasels also are plentiful; probably more have been taken in the Lower Yukon region than ever before. Muskrats, that were not generally considered worth shipping fifteen years ago, are now one of the most important furs of the territory. I have no statistics, but muskrat may now be our leading fur. The regu-

lations protecting the beaver and the pine marten are not very generally enforced and many of these animals will be taken this season. The territory in Alaska is very large and the money appropriated for protection of game and fur animals is very little, amounting this season to much less than the value of illegally caught furs that were seized.—A. H. Twitchell, *Flat, Iditarod Region, Alaska.*

RECENT LITERATURE

Fitzsimons, F. W. The Natural History of South Africa. Mammals. Vol. 3, pp. i–xiii, 1–278, 47 plates; Vol. 4, pp. i–xix, 1–271, 30 plates. London; Longmans, Green and Co., 1920.

The last volumes of this work, copies of which have recently reached America, are filled with interesting facts in the history of the mammals of South Africa, presented in an original and unusually readable form. The third volume, dealing with the ungulates, pictures a sad record of extermination rarely equalled in historical times in any part of the world. It is a vivid reminder of the passing of the Age of Mammals. While the solitary and smaller antelopes have held out to a surprising degree, even in settled communities, the gregarious and conspicuous species have been literally swept away since the advent of the white man. Of the bluebuck it is stated that the last known individual was killed as early as 1799 or 1800, and that only five specimens are preserved in the museums of the world. A few quaggas existed until about 1878. The typical form of Burchell's zebra is extinct, or nearly so; but one of its subspecies, threatened with the same fate, has been saved by the establishment of game reservations and by the enforcemence of strict government regulations. The beautiful bontebok, which formerly occurred in tens of thousands, is extinct in a wild state; only three or four hundred animals, some of which are mixed with blesbok blood, remain today on carefully guarded preserves. The blesbok, too, has virtually ceased to exist as a wild creature, but is said to be in no danger of extermination as it is kept in numbers on fenced farms; the meat commands a good price in the markets and there is a regular demand for specimens. The white-tailed gnu exists only under similar conditions.

The typical white rhinoceros has been reduced to about 20 individuals on the game reserves in Zululand, while possibly "one or two may exist in remote parts of southern Rhodesia," where one, supposed to be the last, was shot in 1895. The case of the elephants of the Addo Bush, practically the only survivors of the South African herds, is reviewed at some length. It has been variously estimated that these numbered from 90 to 150 animals; but 75 are now being killed under official direction, and it has been predicted that within four years the elephant will be extinct in South Africa. In spite of this harrowing detail of man's destruction of interesting creatures, the accounts of the former abundance of the gregarious species are fascinating, and particularly interesting are the stories of the early migrations of the enormous herds of springboks. The hippopotamus is known to migrate at sea between the mouths of rivers.

The fourth volume includes accounts of the insectivores, rodents, cetaceans, the elephant-seal, pangolin, and aard-vark. It is stated: "Shrews vary in their